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Freedom of Information Request Yields Lawyers' Letters

Part II: The Fraud Study That's Too Hot to Publish

Part I of "Tale of the Fraud Study That's Too Hot to Publish," in the preceding issue of SGR, related the saga of NIH researchers Ned Feder and Walter M. Stewart. On their own initiative, they examined the coauthored publications of John R. Darsee, who was exposed in 1981 as a prodigious scientific faker of cardiacresearch data at his former place of employment, Emory University School of Medicine, and at the Harvard Medical School.

The Feder-Stewart paper focused not on the fabricated data in some 100 various publications co-authored with Darsee. Instead, assuming that the falsified material was unknown to the co-authors, who numbered 47 in all, the Feder-Stewart inquiry examined the publications of Darsee et al. for questionable matters that an attentive scientist or reviewer might reasonably be expected to regard as suspect.

They found numerous internal discrepencies, such as a published report of a family with a high incidence of unusual heart disease in which a "17-year-old male had 4 children, ages 8, 7, 5, and 4" and a woman had her last child at age 52. They found many discrepencies

between tabular and textual data, and in one case, 3 of the 5 oldest subjects in a study "are shown as having died before the beginning of the study." In some cases, they report, "the major errors are fundamental and call into question the validity of the paper's main conclusions." They also noted reuse of randomized controls.

Completed in 1983, and initially submitted to the British weekly Nature, the Feder-Stewart paper has become a scientific Flying Dutchman, unable to find a place of publication, despite praise from reviewers and expressions of regret from editors. One aspect of its situation is a barrage of letters from attorneys for 2 Darsee co-authors, Eugene Brawnwald, who founded the Harvard Cardiac Research Laboratory in which Darsee worked, and Robert Kloner, who was then Director of the Laboratory.

Under a Freedom of Information Act request to NIH, SGR has obtained this correspondence and some related materials. We present excerpts in the belief that the participation of lawyers in the traditional peer-review process is an event that merits the attention of the scientific community. —DSG

April 10, 1984, from Warren F. Baker, of the law firm Rivkind, Baker & Golden, Boston, representing Robert A. Kloner, to John Maddox, editor, Nature:

Noting that the Feder-Stewart paper states, "We wish to emphasize that none of the investigations or accounts of Darsee's work has suggested that any of his co-authors acted with him in forging data or had any knowledge that he was doing so," attorney Baker wrote to editor Maddox, "Drs. Stewart and Feder are the first to make such suggestion. This statement does not purge them of defamation . . . The publication of this article in its present form is malicious defamation and will be treated as such This letter is notice to you and shall constitute such. No right is granted or given to publish or republish this letter in whole or in part."

June 1, 1984, from Bancroft Littlefield Jr., of the law firm Foley, Hoag, & Eliot, Boston, representing Eugene Braunwald, to Walter Stewart:

"Your paper as it is presently written unlawfully libels and defames Dr. Braunwald and others It is not a sufficient defense that you honestly and in good faith believe those allegations; they are false and by communicating them to third parties, even by informally circu-

lating drafts of your paper, you have committed defamation and libel for which you can be held liable in an action for compensatory and punitive damages. Any journal which publishes your paper is subject to joint and several liability along with you."

August 7, 1984, from Littlefield (attorney for Braunwald) to Robert B. Lanman, Legal Adviser, NIH, regarding revisions that Feder and Stewart had made in their paper following letters from attorneys for Braunwald and Kloner:

"... I would direct your attention to how unmistakably defamatory the Stewart and Feder paper is even after 3 formal revisions.... Stewart and Feder do not merely allege that the Harvard co-authors should have known of the reuse of data in ... 5 papers,... While it is true that the co-authors sanctioned the reuse of control data in a limited number of instances where the experimental conditions were identical, Stewart and Feder convey the grossly inaccurate impression that the co-authors sanctioned Darsee's reuse of control data in all of the experiments, even when the conditions were not identical [T]he allegation that Dr. Braun-

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.. NIH Lawyer Assails Attacks on Authors of Study

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wald's co-authorship of the 5 papers was a practice that departed from generally accepted standards is a statement of fact which is false and libelous."

October 11, 1984, from NIH Legal Adviser Lanman to Littlefield (attorney for Braunwald):

"Initially, I want to express my serious concern with your charge that Mr. Stewart and Dr. Feder have acted maliciously in preparing the draft article. You offer absolutely no evidence for this serious charge; therefore, I believe it to be reckless and ill-advised [I]t is the position of Stewart and Feder that the 2 senior Harvard co-authors sanctioned the practice of resusing control results in more than one study and describing them as formally randomized even though they knew or should have known they were not. Indeed, they quote one of the senior co-authors to the effect that this practice was not uncommon I believe you have failed to recognize the clear distinction made in the draft article between Dr. Darsee's falsification of data, made without the complicity or knowledge of the co-authors, and those actions of his co-authors, not involving falsification of data, that depart in other ways from accepted standards of research . . . [Y]our other allegations of malice are reckless and totally without foundation."

Contact With NIH Director

May 3, 1985, from Peter B. Hutt (former General Counsel, Food and Drug Administration), of the law firm Covington & Burling, Washington, DC, writing in behalf of Braunwald to NIH Director James B. Wyngaarden:

"Dear Jim, In September I met with you to discuss the draft paper prepared by Dr. Feder and Mr. Stewart Following . . . rejections (by Science and Nature), we are informed that Dr. Feder and Mr. Stewart have circulated the draft paper simultaneously to a number of journals in the United States. We have asked for the names of those journals, but that information has been denied us I am requesting that the relevant background correspondence and memoranda we have submitted relating to the draft paper be provided to all journals to which the draft paper has already been submitted, and that in the future these documents also be provided if the draft paper is submitted to still more journals for consideration for publication."

August 26, 1985, Littlefield (attorney for Braunwald) to Benjamin Lewin, editor, Cell:

"Although the authors have made changes in the drafts over the months in response to our comments, the principal false or misleading allegations remain in the current draft [T]he authors purport to tabulate

numbers of instances of dishonest acts . . . and of professional misconduct not involving dishonesty . . . by the scientists involved. Table 5 alleges that Dr. Braunwald engaged in 21 instances of professional misconduct not involving dishonesty, and 9 instances of dishonest conduct in 5 papers he co-authored with Dr. Darsee. These are serious and extraordinary allegations We have advised Mr. Stewart and Dr. Feder that under their definition, Dr. Braunwald is not an honorary coauthor, and we have asked for proof from them of their serious accusation . . . that he acted dishonestly in this regard [Contrary to the implications of the Feder-Stewart paper Dr. Braunwald was directly and substantially involved in the conception, development, and ongoing review of data collection as well as in the preparation of the resulting papers."

NIH Officer Admonishes Lawyer

September 26, 1985, Bowen Hosford, Freedom of Information Officer, NIH, to Littlefield (attorney for Braunwald), responding to Littlefield's request of September 12, under the Freedom of Information Act, for correspondence between Feder and Stewart and Nature editor John Maddox. Littlefield indicated that he wished to furnish the correspondence to the editor of Cell, who was then considering the paper. (As it turned out, Feder and Stewart had already sent the correspondence to Cell.) Concerning one letter over which there had been some confusion, Hosford noted in his response to Littlefield:

"A copy of the letter is enclosed. Incidentally, as a Freedom of Information officer, it is appropriate for me to comment on your having marked your September 12 letter 'CONFIDENTIAL.' I cannot give any assurance that such a designation will be honored. The government can withhold such a letter from others only if it falls within one or more exemptions of the Freedom of Information Act. To allow you to control the releasability of the letter merely by marking it confidential would be to allow you to rewrite the Freedom of Information Act."

January 11, 1985, from John Maddox, editor, Nature, to Feder and Stewart:

"Let me explain that from my point of view the overriding need is not so much to modify your paper so as to avoid a libel suit but to ensure that it is both fair and the scientific document it purports to be What you have done, the interesting part of your paper, is to show how many errors and other lapses appear in the publications by Darsee and his colleagues. To have described these is useful, indeed valuable."

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Denying Legal Threats, While Warning of Libel

September 18, 1985, from Baker (attorney for Kloner) to Cell editor Lewin:

"The proposed article is clearly defamatory to Dr. Kloner even though it has been subject to substantial revisions. In many ways the current draft is more dangerous than its predecessors If the article is published in its present form, it will cause irreparable and serious damage to Dr. Kloner's professional reputation, and will be published by you with actual malice From Dr. Kloner's own experience in the laboratory, there is no question that Dr. Braunwald made significant contributions to the research, design of experiments, drafting of paper (sic), and also data review and interpretations at meetings. Thus, the charge that Dr. Braunwald was an honorary co-author is false and clearly libelous . . . "

October 22, 1985, marked "CONFIDENTIAL," from Littlefield (attorney for Braunwald) to Lewin:

"In our telephone conversation of last Thursday, you suggested that if I could give you assurances that Dr. Braunwald will not take any legal action with respect to the Stewart and Feder paper then you would undertake, as a matter of editorial prerogative, to make certain changes in that paper along the lines discussed in my previous memoranda and correspondence to you. As I told you last week, your proposal makes me somewhat uncomfortable, since it might be misunderstood, particularly by Feder and Stewart, as implying we had once threatened legal action against Cell which we have not, or that Cell had made editorial judgments as a result of threats of litigation. In all of our communications, I have specifically sought not to raise the issue of litigation in order to avoid even the appearance that Dr. Braunwald was using the threat of a libel action to influence Cell's editorial judgment."

[SGR Editor's Note: In a letter to Cell editor Lewin dated August 26, 1985, Littlefield stated that "publication of the paper as it presently stands will unlawfully libel and defame Dr. Braunwald and others." Requesting a meeting with Lewin, Littlefield stated, "At such a meeting, I will also be prepared, if you wish, to indicate to you the basis for my assertion that publication of the paper as it presently stands would constitute libel against Dr. Braunwald and others."]

In Brief

Scientific American is facing an uncertain future as ad revenues continue a long decline. From \$17 million in 1984, they dropped to \$14 million last year, and so far this year, the number of pages of ads is down by 27 percent. Minority stockholders are reported to be pushing for a sale, for which Time Inc. is said to be a possible party. The magazine's Chairman and former editor. Gerald Piel, is so engrossed in trying to salvage the publication that he missed the most recent Board meeting of the AAAS, of which he is President.

Also on the publication front, Issues, the quarterly policy journal of the National Academy of Sciences, is approaching a crucial decision point. First published in Fall 1984, the journal started out as cautious and dull as its sponsoring institution. Though Issues has been improving in topicality and liveliness, it has acquired only 12,000 cash customers, along with 20,000 subsidized giveaways. A decision on continuation is scheduled by vear's end.

Meanwhile, the Academy has finally worked out a deal for a full-fledged resumption of relations with its Soviet counterpart, and a signing is expected to take place soon, possibly this month.

The issue of Soviet-bloc access to US supercomputers remains unresolved in negotiations involving NSF, Defense, and the State Department. The main sticking point is DoD's insistence that the computers be off limits to eastern-bloc students doing course work on campuses where they're located. NSF is warning that the restriction would incite some universities to walk out of the supercomputer program.

NAS Elects Foreign Secretary

William E. Gordon, Professor emeritus at Rice University, has been elected Foreign Secretary of the National Academy of Sciences, succeeding Walter A. Rosenblith, of MIT, who held the post since 1982. New NAS Councilors are: Francisco Ayala, UC Davis: Harry B. Gray, Caltech; Arthur Kelman, U. Wisconsin, and Francis E. Low, MIT.

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House Science Chairman Fuqua Quitting Congress

Destination undisclosed, Rep. Don Fuqua (D-Fla.), Chairman of the House Science and Technology Committee since 1979, has announced that he'll retire from Congress at the end of this year. Now in his 12th term, Fuqua is apparently just tired of the job.

Next in seniority, but subject to challenge, is an old New Jersey pol who's a stranger to science-policy affairs, Rep. Robert A. Roe, 62, of Paterson, NJ, a 9th termer who was first elected to Congress in 1968. The Roe prospect is not popular with Washington's science-policy mandarins, who regard the Science and Technology Committee as a sympathetic, knowledgeable base in a legislative body that's usually preoccupied with grander matters than the obscurities of science policy.

Fuqua and his predecessors in the chairmanship were long-time students of scientific sensitivities, and when problems arose—such as the current squabble over indirect costs—they could be counted on to provide a forum for anguished scientists and academic managers.

Roe is on the brink of the chairmanship from having collected seniority points on the Science and Technology Committee while virtually ignoring it in favor of the Public Works and Transportation Committee, where he now chairs the Water Resources Subcommittee. Roe is particularly noted in the House for his close attention to New Jersey, where he began his political career in 1956 as Mayor of Wayne Township and unsuccessfully ran for Governor in 1977. Minding the home folks is a large part of life on Capitol Hill, but he's said to mind them more than most.

In length of biographical entry in the Congressional Directory, Roe is second only to 85-year-old Claude Pepper. Roe's page-long entry includes, "1980 Special Recognition Award, Wayne Police Athletic League for helping boys and girls become good citizens." Until about a month ago, when Fuqua slipped him word about his retirement plans, Roe showed almost no interest in the Science and Technology Committee.

Since then, however, he has been looking in on his first opportunity to join the charmed circle of House committee chairmen. The Science and Technology Committee is of middling importance in the House hierarchy, but the chairmanship—any House chairmanship—is politically and socially preferrable to no chairmanship.

Staff aides say that Fuqua, a House member since 1963, plans to remain in the Washington area, and that his departure is unrelated to the health of his wife, who was successfully treated for cancer last year. Age 52, Fuqua is not of the legally trained breed that easily moves from Capitol Hill to downtown lobbying—his degree is in agricultural economics. But through his committee experience, he is well-acquainted with NASA, NSF, and the Department of Energy. Staff aides say he will probably sign on with one of the innumerable Washington organizations that value the experience and connections of veteran Congressmen. At this point, the official word is that "no one has offered him a job."

With Democratic retention of House control a near certainty, the selection of committee chairmen rests with the Democrats who will be elected in November for the 100th Congress. The Democratic Caucus, which will meet in December, generally follows seniority in filling the committee posts but not always. In recent years, some unpopular or especially doddering members have been barred from chairmanships that they would have easily acquired in less-contentious times. What Roe has in his favor is that no one is mad at him.

Next in line after Roe for the Fuqua succession is George E. Brown, of California. Brown has long been involved with research-related affairs in the House, and currently chairs the Science and Technology Subcommittee on Transportation, Aviation, and Materials.

During the remaining months of Fuqua's final Congressional term, he will preside over the wind up of the Science Policy Task force that he organized for a long and deep look at federal-science relations. As he recently related in a Q&A with SGR (Vol. XVI, No. 2), a draft report will soon be completed, and then representatives from scientific and academic organizations will be asked to comment.

The outcome of that meandering operation—now approaching the 2-year mark—was never certain. But any recommendations it may offer, however sound they may be, will not benefit from the absence of their sponsor.

Science Heads Lobby in Unison

Reflecting anxieties about the fate of science budgets under Gramm-Rudman, the heads of 28 science and engineering societies have complained in a March 24 letter to Senate Budget Chairman Pete Domenici that science is getting too small a share of total federal R&D spending.

The signatories, showing a new spirit of orchestrated lobbying, urged Congress "to sustain a healthy growth in fundamental research as an essential component of a deficit reduction plan."

Q&A: What's Going on at White House Science Office?

The condition and future of the White House Office of Science and Technology Policy (OSTP) is much discussed in Washington science-policy circles these days as 4 months have rolled by without a full-fledged replacement for Director George A. Keyworth II, who gave notice November 27, and left January 1 for private business (SGR Vol. XV, No. 21). The Director also serves as Science Adviser to the President.

With money the measure of political affection in the Capital, OSTP watchers note that the White House plans a big cut in OSTP's already skimpy bankroll. The President's budget for FY 1987 would provide the office with \$1.6 million in spending authority, a reduction of \$646,000 from this year's figure.

Among the many mandarins who equate a science office in the White House with national survival, there are painful memories of Richard Nixon's abolition of

OSTP's predecessor. The resurrected version, now a decade old, was the product of intense lobbying by the National Academy of Sciences and academic leaders.

OSTP's money trends and the appointment lag have spawned fears that the White House regards the office as inconsequential or perhaps sees it as a nuisance-making rallying point for academic budget boosters. A senior adviser to OSTP speculates that rather than arouse the scientific community with an outright termination, the White House has opted for a withering routine.

SGR discussed these and other matters March 24 with OSTP Acting Director John P. McTague. A physical chemist and former Chairman of the Synchrotron Light Source Department at the Brookhaven National Laboratory, McTague was appointed Deputy Director of OSTP in November 1983. Following are excerpts from the discussion, transcribed and edited by SGR.

SGR. With a 40-percent budget cut scheduled for OSTP, what will happen to the size of the staff here? Will it be reduced considerably?

McTague. Not from its present size. It will be expanded.

SGR. At your appropriations hearing last month, [Rep.] Boland [Chairman of OSTP's House Appropriations Subcommittee] expressed concern that it's going to be reduced.

McTague. From its historic level.

SGR. What was its "historic level"?

McTague. About 45 people.

SGR. Forty-five people on the payroll? When was that?

McTague. That's been the level since the office was founded in '76.

SGR. What is it going to be reduced to or expanded to?

McTague. It depends on how it's done. If one shifts to a larger fraction of detailees [staff members assigned to OSTP from other federal agencies], they only cost half as much. So, if one wishes just to maintain numbers of bodies, we have to pay only half the cost of detailees.

SGR. How many detailees do you have now?

McTague. I guess, 23 or 24, 25, something in that range. All types: some Assistant Directors are detailees, some secretaries, some public affairs people.

SGR. How many non-detailees?

McTague. About 10 or 11.

SGR. With the President's budget proposing a decrease, how will you expand the staff?

McTague. We'll shift to a greater fraction of detailees.

SGR. Will you be able to do that?

McTague. Yes, because the budget that we have now is for the staff that we used to have. Of course, we've

taken a temporary loss, what with Jay [Keyworth] leaving, and Bruce [Abell, public affairs officer and Director's ghostwriter, who accompanied Keyworth], etc. All of these were permanent people. That would free up funds if you shifted to detailees. Jim Ling and Wally Kornack [senior staff members detailed to OSTP] have returned to the Department of Energy. So, we have significant flexibility. The point is that if one decides not to expend resources on expensive people like Deputy Directors, there is significant flexibility in the budget. If, on the other hand, one decides to have high-level presidential appointees, which you have to pay full cost for, that would indeed decrease the number of people in the office. By statute, we can have a Director and up to 4 Associate Directors. But there have never been more than 2 Associate Directors. Now we've just one-me.

SGR. OSTP is also scheduled to give up a substantial amount of office space in the New Executive Office Building.

McTague. That goes with the number of people that you have. It's the functions that people have that demands the space. An Assistant Director needs the space of an Assistant Director. It doesn't matter whether he or she is a detailee or is a permanent staff member. If the numbers [of staff members] go down, the space would go down about 20 percent, maybe a little bit less than that.

SGR. Are any appointments as Associate Directors in the works?

McTague. I think that will be left to the permanent Director of the office to negotiate with presidential personnel You're not going to get a presidential appointment for a supporting position before you get one for a permanent Director of the office.

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... President, Senior Aides Attend Science Luncheons

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SGR. What's happening with that?

McTague. I really don't know. I make no attempts to follow the issue.

SGR. Are you a candidate for Director?

McTague. As I've stated on previous occasions, I enjoy being Deputy Director, I have no particular ambitions in the government, and I'm not campaigning for any office.

SGR. Is there any sign about the White House's intentions. It's unusual to have an Acting Director in a White House staff office for this length of time.

McTague. It's clear that they have been engaging in a process of search for a new Director. What level they're at, I really don't know, nor have I asked, nor will I ask.

SGR. When programs that the Administration strongly favors are in trouble in Congress, it usually gives them strong support. Are you going to get help from the political side of the White House in looking after the science budget?

Presidential Support

McTague. So far, we certainly got some help from the President with his statements. Hardly a week goes by when he doesn't make some very strong statement about science. I'm sure he'll do it again on Wednesday [March 26]. He's having lunch with some scientists to discuss comets and Uranus, which he does periodically—a small lunch with scientists. It doesn't get publicized. We don't publicize it.

SGR. How often does he do that?

McTague. The last one was with some medical researchers, a few months ago. He's had one on the space program in general, and also a series of advanced technology things, computers. People come in to tell him about where we are, what they think the future holds. He asks interesting questions. He likes science.

SGR. Do you attend these things?

McTague. I'll go to this one. Jay [Keyworth] went to the other ones. The President doesn't do it for publicity. He does it because he's interested in science. And usually he gets very high level people to attend—Donald Regan [White House Chief of Staff], Al Kingon [Secretary of the Cabinet], and others. Maybe we should publicize these things.

SGR. Who picks the scientists that attend?

McTague. We do some of it, they do some of it in in the West Wing [of the White House].

SGR. How long has this been going on?

McTague. About a year. It started shortly after the very largescale luncheons last year for so-called new

pioneers. I guess that whetted his interest. So, every few months he has a group of people in. It's an occasion for him to relax. There's no press around—just talk and explore and relax. It's roughly once every 2 months. It got truncated because of his illness last summer.

To get back to your question of, if we as an Administration are so serious about research budgets and their importance, is there a way that we can marshal our forces to get our opinions across better on the Hill? I think right now, things are going reasonably well. Things are looking pretty good. Nothing is through the mill yet. Pushing for one relatively small fraction of the [total federal] budget might not be the best way to proceed. The first thing to do is to see what Congress proposes on the macroscale, and then to decide on tactics.

Cuts Would Crimp New Starts

SGR. Do you think the increases for R&D in the President's budget for next year will survive Gramm-Rudman?

McTague. Things are at a critical stage on the Hill. If there are cuts in the science budgets, they will have serious effects. This is a year in which we have several new starts that were kept waiting from last year and in addition there are this year's new starts. There are a lot of them. The Continuous Electron Beam Facility at Newport News, the synchrotron light source at Berkeley, the cold neutron guide hall at the National Bureau of Standards, the experimental hall for the pulsed neutron facility at Los Alamos, reconstruction of facilities at Argonne, plus new starts in NASA, and others. It's a substantial number of new starts.

If that doesn't happen, that will send a bad signal. Last year, there were essentially no new starts. In addition, there's an apparently large proposed increase in the high-energy and nuclear budgets in the Department of Energy. I say "apparently" because it's a real increase, but it's a real increase in terms of a programmed increase in that we have 2 largescale facilities coming into operation—the Tevatron [at the Fermilab] and the Stanford Linear Collider, as well as some nuclear facilities at universities, for which it would be foolhardy not to provide operating funds. That's where the major apparent increase is. It's not an increase in program. It's a fulfilling of a program to which we've already made a commitment. I'm not sure everyone understands that.

SGR. Fusion research has been cut again.

McTague. There's a clear problem in that the fusion program got way out of whack a few years ago. If someone had a proposal for building something, you'd be

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... Optimistic About Congressional Treatment of R&D

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guaranteed to get some money for it, regardless of how it fit in with a sensible program related to when fusion could conceivably be a commercially viable source of electric power. It doesn't make a heck of a lot of sense to do a lot of engineering work 30 years before you're going to build a plant.

SGR. We knew that 10 years ago, but decided anyway to go ahead.

McTague. It was a case of just excess optimism.

SGR. Your must supportive Chairman, Don Fuqua, is leaving.

McTague. That's going to be a serious blow to science in the United States. He has been a remarkable statesman of science.

I think there's a good chance, that because of the economic aspect of science [as a boon to the national and local economies], things will be different this year from last year, that there will be less of a notion that science is just another part of a freeze. It might start out that way in a macro approach to the budget, but I think

Science Small Part of Budget

that as it comes down to particular issues, and it gets sharpened up, I think science will do relatively well. Whether relatively well is good enough is a real question.

SGR. Isn't the problem that Gramm-Rudman is a doomsday machine, untouched by human hands? If it gets invoked, there are no choices.

McTague. I don't think very many people want to see Gramm-Rudman get invoked as a machine this year. It's going to be a real challenge for the Congress to make the necessary choices. The scene we're operating on is of course much bigger than science. Science is so small a part of this whole thing. The worry is that it will just move along in the wake. But I think that won't happen this year. I think the vote [by a House Science and Technology Subcommittee] on the authorization for the National Science Foundation [approving the 16-percent increase requested by the Administration]—taken in full recognition of the climate in terms of the Budget Committees—sends a good signal.

SGR. Do you see any sign of the pork-barrel spirit being quenched? You expressed concern in the appropriations hearing [for OSTP] about Congressional earmarking of funds spilling over from bricks and mortar to actual research programs.

McTague. If that happens to research monies, we are in real trouble.

SGR. The Secretary of Energy says there's no point in

further study and that a decision should be made soon on whether to build the Superconducting Super Collider.

McTague. He's saying, We do have the information, let's make the decision. Do we go ahead with this, or do we wait for some of the more advanced concepts? Now, the trouble with that is that it looks like we're talking about another 10 years out before some of the advanced concepts for accelerators might bear fruition. Could we, as a nation, afford to sit back for that length of time. We don't want to end up on the negative slope in as fundamental an area as there is in science.

Here we have a hard choice to make. We're talking about a very expensive, sort of end-of-the-line technology. If the SSC is built, it will be the last such facility on that scale, because the next step up is just too large. On the other hand, the new technologies haven't quite matured. Ten years away is a conservative estimate, but no one knows, of course.

SGR. Is there a fear of losing a generation of experimentalists?

McTague. It would be terrible. It might be irretrievable. We do have facilities that are going to be absolutely world class for several years. But because of the long lead times, there would be a gap at the end there, and the signal will already have been sent today telling people, Don't go into that field. Or don't go into science. We have to make sure that we're looking at the cost of this facility, not just in terms of high-energy physics, but what it does for science and technology in general in this country and for our position of leadership in the world and therefore, in the long run, its impact on our economic situation.

SGR. Are things picking up in science and technology activities with the Soviets?

McTague. The President has made it clear that we are to increase contacts with the Soviets, and that indeed is being done. Many of the programs that were de-emphasized over the past 5 or 6 years have begun to increase level of effort. EPA has a program with the Soviets, the Department of Transportation, the National Science Foundation. There are several ongoing efforts that are being increased at a gradual level.

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Publications concerning science and technology policy topics have recently been issued by the following and are available from the indicated addresses (not from SGR):

Congressional Office of Technology Assessment (OTA), (available from the Superintendent of Documents, USGPO, Washington, DC 20402; tel. 202/783-3238):

Supercomputers: Government Plans and Policies, (GPO Stock No. 052-003-01032-1, 28 pages, \$1.00), says the federal government's multi-agency supercomputer programs are under-coordinated; also the scheduled opening next year of 7 supercomputer centers will encounter shortages of trained manpower that "can only worsen as significantly different architectures proliferate."

Microelectronics Research and Development, (GPO Stock No. 052-003-01027-5, 35 pages, \$1.95), warns that losses from increased foreign competition may cause cutbacks in private US support of microelectronics R&D, and that "there is also growing evidence that Japanese basic research efforts are outpacing US efforts in some areas of microelectronics, e.g., optoelectronics."

Transportation of Hazardous Materials: State and Local Activities, (GPO Stock No. 052-003-01016-0, 92 pages, \$3.75), says hazardous-materials shipments, by all types of transport, average about 500,000 per day in the US; accidents averaged over 11,000 a year between 1973-83, and that local firemen and police, usually first on the scene at the mishaps, generally lack suitable training. OTA concludes that "the absence of effective federal program coordination means that jurisdictions have difficulty gaining access to available information, planning, and financial resources."

Department of Energy, Office of Energy Research, Manpower Assessment Program, Washington, DC 20585; tel. 202/252-6641:

Energy-Related Manpower, 1985, (82 pages, no charge), 4th in an annual series prepared for DOE by the Labor and Policy Studies Program, Oak Ridge Associated Universities, forecasts "only modest growth in energy-related employment over the next 5 years"; reports that "constant-dollar federal-funded energy R&D

NSF Reshuffles Directorates

The National Science Foundation plans to pull together a number of its computer-related programs and organize them into a separate Directorate for Computer and Information Science and Engineering. The Directorate, number eight on the NSF organization chart, will be headed by G. Gordon Bell, formerly of Digital Equipment Corp., and until last January, Chief Technical Officer of Encore Computer Corp.

The pieces going into the new Directorate are the Division of Computer Research, now in The Directorate for Mathematical and Physical Sciences; the Division for Information Science and Technology, now in the Directorate for Biological, Behavioral and Social Sciences; the Office of Advanced Scientific Computing, now in the Office of NSF Director Erich Bloch, and parts of the Directorate for Engineering. The reorganization reflects Bloch's insistence that computer research and utilization should rank high in NSF priorities.

NSF has also renamed the Directorate for Astronomical, Atmospheric, Earth and Ocean Sciences. Henceforth, it's to be known as the Directorate of Geosciences—DOG, in NSF shorthand. With the new name comes the loss of astronomical affairs, which are being shifted to the Directorate for Mathematical and Physical Sciences. But "Astronomical" doesn't get a place in the title.

is scheduled to decline from \$2.56 billion in 1985 to \$1.98 billion in 1990," and that "private increases are not expected to fully offset the scheduled decline in federal funding."

National Academy Press, National Academy of Sciences, 2101 Constitution Ave. NW, Washington, DC 20418; tel. 202/334-3313:

What is America Eating? (173 pages, \$14.95), proceedings of a 1984 symposium sponsored by the NAS Food and Nutrition Board, describes federal nutrition-monitoring programs, nutritional status of the US population, dietary trends, and national nutrition policy.

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